

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1           1.       (Previously Presented) A method for invalidating a resource record  
2 in a local cache at a client computer system within a network, comprising:  
3           retrieving the resource record from the local cache at the client;  
4           issuing one or more queries for the resource record;  
5           waiting for a response to the query; and  
6           if the response to the query is not received in a pre-determined amount of  
7 time and after issuing a predetermined number of queries for the resource record,  
8 invalidating the resource record at the client.

1           2       (Canceled).

1           3.       (Original) The method of claim 1, further comprising:  
2           receiving a multicast message from a second client querying a second  
3 device;  
4           locating a second resource record associated with the second device;  
5           waiting for a multicast response to the multicast query; and  
6           if after a pre-determined number of queries the multicast response to the  
7 multicast query is not received in the pre-determined amount of time, invalidating  
8 the second resource record.

1           4.       (Canceled)

1           5.       (Original) The method of claim 1, wherein if the response to the  
2 query is not received in a pre-determined amount of time, the method further  
3 comprises:  
4           retrieving a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issuing a query for the parent record;  
7           waiting for a response to the query from the device; and  
8           if the response to the query is not received in a pre-determined amount of  
9 time, invalidating the parent record, and then repeating the above process by  
10 applying it recursively to any records that refer to the now-invalidated parent  
11 record.

1           6.       (Original) The method of claim 1, wherein if the response to the  
2 query is not received in a pre-determined amount of time, the method further  
3 comprises:  
4           retrieving a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issuing a query for the parent record;  
7           receiving a response to the query from the device, wherein the response  
8 includes information for updating the resource record; and  
9           updating the resource record with the information received in the  
10 response.

1           7. (Original) The method of claim 6, wherein the method further  
2 comprises updating the parent record with the information received in the  
3 response.

1           8.       (Original) The method of claim 1, wherein the method is invoked  
2   at a pre-specified time interval.

1           9.       (Previously Presented) A computer-readable storage medium  
2   storing instructions that when executed by a computer cause the computer to  
3   perform a method for invalidating a resource record in a local cache at a client  
4   computer system within a network, the method comprising:  
5       retrieving the resource record from the local cache at the client;  
6       issuing one or more queries for the resource record;  
7       waiting for a response to the query; and  
8       if the response to the query is not received in a pre-determined amount of  
9   time and after issuing a predetermined number of queries for the resource record,  
10   invalidating the resource record at the client.

1           10      (Canceled).

1           11.      (Original) The computer-readable storage medium of claim 9,  
2   wherein the method further comprises:  
3       receiving a multicast message from a second client querying a second  
4   device;  
5       locating a second resource record associated with the second device;  
6       waiting for a multicast response to the multicast query; and  
7       if after a pre-determined number of queries the multicast response to the  
8   multicast query is not received in the pre-determined amount of time, invalidating  
9   the second resource record.

1           12.      (Canceled)

1           13.     (Original)     The computer-readable storage medium of claim 9,  
2 wherein if the response to the query is not received in a pre-determined amount of  
3 time, the method further comprises:  
4           retrieving a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issuing a query for the parent record;  
7           waiting for a response to the query from the device; and  
8           if the response to the query is not received in a pre-determined amount of  
9 time, invalidating the parent record, and then repeating the above process by  
10 applying it recursively to any records that refer to the now-invalidated parent  
11 record.

1           14.     (Original)     The computer-readable storage medium of claim 9,  
2 wherein if the response to the query is not received in a pre-determined amount of  
3 time, the method further comprises:  
4           retrieving a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issuing a query for the parent record;  
7           receiving a response to the query from the device, wherein the response  
8 includes information for updating the resource record; and  
9           updating the resource record with the information received in the  
10 response.

1           15.     (Original)     The computer-readable storage medium of claim  
2 14, wherein the method further comprises updating the parent record with the  
3 information received in the response.

1           16.     (Original)     The computer-readable storage medium of claim 9,  
2 wherein the method is invoked at a pre-specified time interval.

1           17.   (Previously Presented) An apparatus that invalidates a resource  
2 record in a local cache at a client computer system within a network, comprising:  
3           a retrieval mechanism at the client configured to retrieve the resource  
4 record from the local cache at the client; and  
5           an invalidation mechanism configured to,  
6                       issue one or more queries for the resource record,  
7                       wait for a response to the query, and  
8                       if the response to the query is not received in a pre-  
9                       determined amount of time and after issuing a predetermined  
10                      number of queries for the resource record, to invalidate the  
11                      resource record at the client.

1           18    (Canceled).

1           19.   (Original) The apparatus of claim 17, wherein the invalidation  
2 mechanism is configured to:  
3           receive a multicast message from a second client querying a second  
4 device;  
5           locate a second resource record associated with the second device;  
6           wait for a multicast response to the multicast query; and  
7           if after a pre-determined number of queries the multicast response to the  
8 multicast query is not received in the pre-determined amount of time, to invalidate  
9 the second resource record.

1           20. (Canceled)

1           21.     (Original)     The apparatus of claim 17, wherein if the response  
2 to the query is not received in a pre-determined amount of time, the invalidation  
3 mechanism is additionally configured to:

4           retrieve a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issue a query for the parent record;  
7           wait for a response to the query from the device; and  
8           if the response to the query is not received in a pre-determined amount of  
9 time, to invalidate the parent record, and to then repeat the above process by  
10 applying it recursively to any records that refer to the now-invalidated parent  
11 record.

1           22.     (Original)     The apparatus of claim 17, further comprising an  
2 updating mechanism, wherein if the response to the query is not received in a pre-  
3 determined amount of time, the updating mechanism is configured to:

4           retrieve a parent record of the resource record at the client, wherein the  
5 parent record refers to the resource record;  
6           issue a query for the parent record;  
7           receive a response to the query from the device, wherein the response  
8 includes information for updating the resource record; and to  
9           update the resource record with the information received in the response.

1           23.     (Original)     The apparatus of claim 22, wherein the updating  
2 mechanism is additionally configured to update the parent record with the  
3 information received in the response.

1           24.     (Original)     The apparatus of claim 17, wherein the apparatus is  
2 invoked at a pre-specified time interval.

1           25–34.       (Canceled)

1           35.     (Previously Presented) The method of claim 1 wherein invalidating  
2 the resource record further comprises invalidating a child resource record of the  
3 resource record.

1           36.     (Previously Presented) The computer-readable storage medium of  
2 claim 9, wherein invalidating the resource record further comprises invalidating a  
3 child resource record of the resource record.

1           37.     (Previously Presented) The apparatus of claim 17, wherein  
2 invalidating the resource record further comprises invalidating a child resource  
3 record of the resource record.

1           38-39. (Cancelled)

1           40.     (New) A method for validating a resource record in a local cache  
2 at a client computer system, comprising:  
3       receiving a request to use a service;  
4       looking up a service record for the service in a cache;  
5       looking up an address record referenced by the service record and using a  
6 host address and a port number in the address record to send a query to the service  
7 on the network;  
8       if the service responds within a predetermined time, using the service;  
9       if the service does not respond within the predetermined time, resending  
10 the query to the service until the service responds, at which time the service is  
11 used, or until a predetermined number of queries has been sent;

12           upon sending the predetermined number of queries without receiving a  
13   response, marking the address record referenced by the service record as suspect,  
14   and querying for a new address record for the service by:  
15            sending a multicast query requesting the address record on the  
16   network and waiting a predetermined time for a response;  
17            if the service responds, updating address record with address  
18   information included in the response;  
19            if the service does not respond after a predetermined time and after  
20   resending the query a predetermined number times:  
21            deleting the address record.  
22            marking the service record as suspect; and  
23            sending a multicast query for the service record on the  
24   network and waiting for a response;  
25            if a response is received, updating the cache and  
26   using the service;  
27            otherwise, if no response is received, deleting the  
28   service record from the cache.